CLAIMS

1.   A method for selecting a coprocessor from a plurality of coprocessors to process a packet of a predetermined size, the method comprising the steps of:

determining a cost associated with the packet, the cost representing a load associated with processing the packet;

determining an anticipated load for each coprocessor in the plurality of coprocessors using the cost; and

selecting the coprocessor from the plurality of coprocessors based on the anticipated load.

2.   The method of claim 1 wherein the step of determining a cost further comprising the step of:

calculating the cost using a rate associated with processing the packet.

3.   The method of claim 2 wherein the rate is stored in a lookup table.

4.   The method of claim 2 wherein the step of calculating the cost further comprising the step of:

dividing the packet's size by the rate.

5.   The method of claim 2 wherein the step of calculating the cost further comprising the step of:

multiplying the packet's size by a multiplicative inverse of the rate.

6.   The method of claim 1 wherein the step of determining a cost further comprising the step of:

applying the packet's size to a lookup table containing one or more cost values to determine the cost.

7.	The method of claim 1 wherein the step of determining an anticipated load further comprising the step of:

adding the cost to a cumulative load associated with each coprocessor in the plurality of coprocessors.

8.	The method of claim 1 wherein the step of selecting the coprocessor further comprising the step of:

selecting the coprocessor from a group of one or more coprocessors whose anticipated load is a minimum load.

9.	The method of claim 8 wherein the coprocessor is selected using a scheduling algorithm.

10.	The method of claim 1 wherein the step of selecting the coprocessor further comprising the step of:

determining if a port associated with the packet is congested.

11.	The method of claim 10 wherein the step of selecting the coprocessor further comprising the step of:

selecting the coprocessor from a group of one or more coprocessors whose anticipated load is not a minimum load.

12.	The method of claim 10 wherein the step of selecting the coprocessor further comprising the step of:

selecting the coprocessor from a group of one or more coprocessors whose anticipated load is a minimum load.

13.	The method of claim 1 further comprising the step of:

incrementing a cumulative load associated with the selected coprocessor.

1 14.   The method of claim 13 wherein the step of incrementing a cumulative load fur-

2 ther comprising the step of:

3   adding the cost to the cumulative load.

1 15.   The method of claim 1 further comprising the step of:

2   decrementing a cumulative load associated with the selected coprocessor.

1 16.   The method of claim 15 wherein the step of decrementing a cumulative load fur-

2 ther comprising the steps of:

3   subtracting the cost from the cumulative load.

1 17.   An apparatus for selecting a coprocessor from a plurality of coprocessors to proc-

2 ess a packet of a predetermined size, the apparatus comprising:

3   a memory containing one or more software routines, including a software routine

4 configured to determine a cost associated with the packet, the cost representing a load

5 associated with processing the packet; and

6   a processor configured to execute the software routines to determine an antici-

7 pated load for each coprocessor in the plurality of coprocessors using the cost and to se-

8 lect the coprocessor from the plurality of coprocessors based on the anticipated load.

1 18.   The apparatus of claim 17 further comprising:

2   a data structure;

3   wherein the cost is determined using information contained in the data structure.

1 19.   The apparatus of claim 18 wherein the information contained in the data structure

2 includes the cost.

1 20.   The apparatus of claim 18 wherein the information contained in the data structure

2 includes a rate the coprocessor can process the packet.

1   21.   An intermediate device configured to select a coprocessor from a plurality of co-

2   processors to process a packet of a predetermined size, the intermediate device compris-

3   ing:

4   means for determining a cost associated with the packet, the cost representing a

5   load associated with processing the packet;

6   means for determining an anticipated load for each coprocessor in the plurality of

7   coprocessors using the cost; and

8   means for selecting the coprocessor based on the anticipated load.

1   22.   A computer readable media comprising:

2   the computer readable media containing computer executable instructions for

3   execution in a processor for the practice of the method of claim 1.